



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,888	09/22/2003	Shoichi Koyama	03500.017574	4258
5514	7590	09/21/2005	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			BEATTY, ROBERT B	
			ART UNIT	PAPER NUMBER
			2852	
DATE MAILED: 09/21/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/664,888

Applicant(s)

KOYAMA ET AL.

Examiner

Robert Beatty

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 12-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. Applicant's election with traverse of invention I (claims 1-11) in the reply filed on 7/7/2005 is acknowledged. The traversal is on the ground(s) that the examiner would have a nominal increased burden to determine art relevant to the non-elected invention. This is not found persuasive because the non-elected invention claims a developing device with a memory which has nothing to do (at least as claimed) with the relationship of the first and second detector processing that is characterized in invention I. Therefore, the examiner believes it would require more than just a nominal burden to examine these claims along with the claims of invention I.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 12-17 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 7/7/2005.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

4. The drawings are objected to because in Figs 1 and 4, "LEDON" should be changed to --LED ON--; Fig.15 should be labeled as "Prior Art". Corrected drawing

sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1,5-6,11 are rejected under 35 U.S.C. 102(a) as being anticipated by Matsumoto et al. (U.S. 6,397,018)

Matsumoto et al. teach an image forming apparatus having a developing device for developing a latent image on a photosensitive drum comprising a first and second developer amount detection devices (see Fig.31) which comprise capacitive sensing electrodes 9a,83 and 83,82 which detect the remaining amount of developer material (toner) within the developing device based on the depletion due to image formation / image information (i.e. the more the image information (text), the more the toner will be depleted). It is recognized that each detector has a more accurate specific toner density range it operates in and therefore, one detector will operate when the toner density is above a specific value, and then both will operate and an average or weighting will occur for the two density signals in order to obtain a correct toner density. See Figs 37-46. For example, when the first detector output A1 reaches a specific level "a", the toner remaining amount detection will be determined from both outputs A1 and A2 from both detectors. However, for certain regions of remaining toner, only one of the outputs is required to determine the remaining toner amount.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at

the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. in view of Mukohara (JP# 2001-228698).

Matsumoto et al. taught supra discloses most of what is claimed except one of the detectors being an optical detector. Mukohara teach an image forming apparatus having two toner remaining amount detectors where one is an optical detector. The image forming apparatus will alternate between the two of them depending on the toner residual amount (i.e. below 50% the optical detector will be used). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an optical detector for determining toner remaining amount in Matsumoto et al. because this is an equivalent device for determining the toner remaining amount in image forming apparatus.

6. Claims 3-4, 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. in view of Abe et al.

Matsumoto et al. taught supra discloses most of what is claimed except the image forming apparatus having a non-volatile memory for storing toner remaining amount information. Abe et al. teach an image forming apparatus which uses a detector for detecting the toner remaining amount and stores it in a non-volatile memory (col.5, lines 1-19; col.11, lines 22-23). It would have been obvious to one of ordinary skill in the art at the time the invention was made to store the remaining

Art Unit: 2852

toner amount in a memory because one can always know how much toner is left in the developing device even if it is detached.

7. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

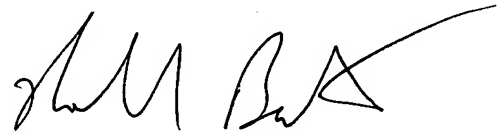
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fukui et al., Otomo et al., Kawai et al., Sakemi et al., Sakurai, Koizumi et al., and Sakai et al. all teach image forming apparatus using a plurality of toner remaining amount detectors / processors to determine the remaining amount of toner based on these detectors.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Beatty whose telephone number is (571) 272-2130. The examiner can normally be reached on M-F from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley, can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'R. Beatty', with a long horizontal stroke extending to the right.

Robert Beatty  
Primary Examiner  
Art Unit 2852

September 17, 2005